

## SEQUENCE LISTING

<110> Hannah, L. Curtis  
Greene, Thomas W.

<120> Heat Stable Mutants of Starch Biosynthesis Enzymes

<130> UF-178AXC2

<150> US 09/312,433  
<151> 1999-05-14

<150> US 60/085,460  
<151> 1998-05-14

<150> US 08/972,545  
<151> 1997-11-18

<150> US 60/031,045  
<151> 1996-11-18

<160> 36

<210> 1  
<211> 33  
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<213> HS 33 Mutant of Zea mays

<400> 1

Leu His Asp Phe Gly Ser Glu Ile Leu Pro Arg Ala Val Leu Asp Tyr  
1 5 10 15

Ser Val Gln Ala Cys Ile Phe Thr Gly Tyr Trp Glu Asp Val Gly Thr  
20 25 30

Ile

<210> 2  
<211> 33  
<212> PRT  
<213> Zea mays

<400> 2

Leu His Asp Phe Gly Ser Glu Ile Leu Pro Arg Ala Val Leu Asp His  
1 5 10 15

Ser Val Gln Ala Cys Ile Phe Thr Gly Tyr Trp Glu Asp Val Gly Thr  
20 25 30

Ile

<210> 3  
<211> 33  
<212> PRT  
<213> *Triticum aestivum*

<400> 3

Leu His Asp Phe Gly Ser Glu Ile Leu Pro Arg Ala Leu His Asp His  
1 5 10 15

Asn Val Gln Ala Tyr Val Phe Thr Asp Tyr Trp Glu Asp Ile Gly Thr  
20 25 30

Ile

<210> 4  
<211> 33  
<212> PRT  
<213> *Hordeum vulgare*

<400> 4

Leu His Asp Phe Gly Ser Glu Ile Leu Pro Arg Ala Leu His Asp His  
1 5 10 15

Asn Val Gln Ala Tyr Val Phe Thr Asp Tyr Trp Glu Asp Ile Gly Thr  
20 25 30

Ile

<210> 5  
<211> 33  
<212> PRT  
<213> *Solanum tuberosum*

<400> 5

Ser Asn Asp Phe Gly Ser Glu Ile Leu Pro Ala Ala Ile Asp Asp Tyr  
1 5 10 15

Asn Val Gln Ala Tyr Ile Phe Lys Asp Tyr Trp Glu Asp Ile Gly Thr  
20 25 30

Ile

<210> 6  
<211> 26  
<212> PRT  
<213> HS40 Mutant of *Zea mays*

<400> 6

Ala Gly Lys Val Pro Ile Gly Ile Gly Arg Asn Ile Lys Ile Arg Asn  
1 5 10 15

Cys Ile Ile Asp Met Asn Ala Arg Ile Gly  
20 25

<210> 7  
<211> 26  
<212> PRT  
<213> Zea mays

<400> 7

Ala Gly Lys Val Pro Ile Gly Ile Gly Arg Asn Thr Lys Ile Arg Asn  
1 5 10 15

Cys Ile Ile Asp Met Asn Ala Arg Ile Gly  
20 25

<210> 8  
<211> 26  
<212> PRT  
<213> Triticum aestivum

<400> 8

Glu Gly Lys Val Pro Ile Gly Val Gly Glu Asn Thr Lys Ile Ser Asn  
1 5 10 15

Cys Ile Ile Asp Met Asn Ala Arg Ile Gly  
20 25

<210> 9  
<211> 26  
<212> PRT  
<213> Hordeum vulgare

<400> 9

Glu Gly Lys Val Pro Ile Gly Val Gly Glu Asn Thr Lys Ile Ser Asn  
1 5 10 15

Cys Ile Ile Asp Met Asn Ala Arg Ile Gly  
20 25

<210> 10  
<211> 26  
<212> PRT  
<213> Solanum tuberosum

<400> 10

Glu Gly Lys Val Pro Ile Gly Ile Gly Glu Asn Thr Lys Ile Arg Lys  
1 5 10 15

Cys Ile Ile Asp Lys Asn Ala Lys Ile Gly  
20 25

<210> 11  
<211> 11  
<212> PRT  
<213> Spinicia oleracea

<400> 11

Ile Lys Asp Ala Ile Ile Asp Lys Asn Ala Arg  
1 5 10

<210> 12  
<211> 20  
<212> PRT  
<213> TS48 Mutant of Zea mays

<400> 12

Cys Ser Arg Val Ser Ser Gly Cys Glu Phe Lys Asp Ser Val Met Met  
1 5 10 15

Gly Ala Asp Ile  
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<210> 13  
<211> 20  
<212> PRT  
<213> Zea mays

<400> 13

Cys Ser Arg Val Ser Ser Gly Cys Glu Leu Lys Asp Ser Val Met Met  
1 5 10 15

Gly Ala Asp Ile  
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<210> 14  
<211> 20  
<212> PRT  
<213> Triticum aestivum

<400> 14

Arg Ser Arg Leu Asn Ser Gly Ser Glu Leu Lys Asn Ala Met Met Met  
1 5 10 15

Gly Ala Asp Ser  
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<210> 15  
<211> 20  
<212> PRT  
<213> Hordeum vulgare

<400> 15

Arg Ser Arg Leu Asn Ser Gly Ser Glu Leu Lys Asn Ala Met Met Met  
1 5 10 15

Gly Ala Asp Ser  
20

<210> 16  
<211> 12  
<212> PRT  
<213> Oryza sativa

<400> 16

Ser Ser Arg Val Ser Ser Gly Cys Glu Leu Lys Ile  
1 5 10

<210> 17  
<211> 24  
<212> PRT  
<213> TS60 Mutant of Zea mays

<400> 17

Asp Phe Gly Ser Lys Ile Leu Pro Arg Ala Val Leu Asp His Ser Val  
1 5 10 15

Gln Ala Cys Ile Phe Thr Gly Tyr  
20

<210> 18  
<211> 24  
<212> PRT  
<213> Zea mays

<400> 18

Asp Phe Gly Ser Glu Ile Leu Pro Arg Ala Val Leu Asp His Ser Val  
1 5 10 15

Gln Ala Cys Ile Phe Thr Gly Tyr  
20

<210> 19  
<211> 24  
<212> PRT  
<213> *Triticum aestivum*

<400> 19

Asp Phe Gly Ser Glu Ile Leu Pro Arg Ala Leu His Asp His Asn Val  
1 5 10 15

Gln Ala Tyr Val Phe Thr Asp Tyr  
20

<210> 20  
<211> 24  
<212> PRT  
<213> *Hordeum vulgare*

<400> 20

Asp Phe Gly Ser Glu Ile Leu Pro Arg Ala Leu His Asp His Asn Val  
1 5 10 15

Gln Ala Tyr Val Phe Thr Asp Tyr  
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<210> 21  
<211> 25  
<212> PRT  
<213> *Oryza sativa*

<400> 21

Asp Phe Gly Ser Glu Ile Leu Pro Arg Ala Leu Leu Glu His Asn Val  
1 5 10 15

Lys Val Ala Cys Val Phe Thr Glu Tyr  
20 25

<210> 22  
<211> 25  
<212> PRT  
<213> *TS60 Mutant of Zea mays*

<400> 22

Glu Asp Val Gly Thr Ile Lys Ser Phe Phe Asp Ala Asn Leu Val Leu  
1 5 10 15

Thr Glu Gln Pro Ser Lys Phe Asp Phe  
20 25

<210> 23  
<211> 25  
<212> PRT  
<213> Zea mays

<400> 23

Glu Asp Val Gly Thr Ile Lys Ser Phe Phe Asp Ala Asn Leu Ala Leu  
1 5 10 15

Thr Glu Gln Pro Ser Lys Phe Asp Phe  
20 25

<210> 24  
<211> 25  
<212> PRT  
<213> Triticum aestivum

<400> 24

Glu Asp Ile Gly Thr Ile Arg Ser Phe Phe Asp Ala Asn Met Ala Leu  
1 5 10 15

Cys Glu Gln Pro Pro Lys Phe Glu Phe  
20 25

<210> 25  
<211> 25  
<212> PRT  
<213> Hordeum vulgare

<400> 25

Glu Asp Ile Gly Thr Ile Arg Ser Phe Phe Asp Ala Asn Met Ala Leu  
1 5 10 15

Cys Glu Gln Pro Pro Lys Phe Glu Phe  
20 25

<210> 26  
<211> 25  
<212> PRT  
<213> Oryza sativa

<400> 26

Glu Asp Ile Gly Thr Ile Lys Ser Phe Phe Asp Ala Asn Leu Ala Leu  
1 5 10 15

Thr Glu Gln Pro Pro Lys Phe Glu Phe  
20 25

<210> 27  
<211> 20  
<212> PRT  
<213> RTS48-2 Mutant of Zea mays

<400> 27

Thr Gln Met Pro Glu Glu Pro Val Gly Trp Phe Gln Gly Thr Ala Asp  
1 5 10 15

Ser Ile Arg Lys  
20

<210> 28  
<211> 20  
<212> PRT  
<213> Zea mays

<400> 28

Thr Gln Met Pro Glu Glu Pro Ala Gly Trp Phe Gln Gly Thr Ala Asp  
1 5 10 15

Ser Ile Arg Lys  
20

<210> 29  
<211> 20  
<212> PRT  
<213> Triticum aestivum

<400> 29

Thr Gln Met Pro Gly Glu Ala Ala Gly Trp Phe Arg Gly Thr Ala Asp  
1 5 10 15

Ala Val Arg Lys  
20

<210> 30  
<211> 20  
<212> PRT  
<213> Hordeum vulgare

<400> 30

Thr Gln Met Pro Gly Glu Ala Ala Gly Trp Phe Arg Gly Thr Ala Asp  
1 5 10 15

Ala Val Arg Lys  
20

<210> 31  
<211> 20  
<212> PRT  
<213> Oryza sativa

<400> 31

Thr Gln Met Pro Asp Glu Pro Ala Gly Trp Phe Gln Gly Thr Ala Asp  
1 5 10 15

Ala Ile Arg Lys  
20

<210> 32  
<211> 18  
<212> PRT  
<213> RTS60-1 Mutant of Zea mays

<400> 32

Asp Lys Cys Lys Met Lys Tyr Val Phe Ile Ser Asp Gly Cys Leu Leu  
1 5 10 15

Arg Glu

<210> 33  
<211> 18  
<212> PRT  
<213> Zea mays

<400> 33

Asp Lys Cys Lys Met Lys Tyr Ala Phe Ile Ser Asp Gly Cys Leu Leu  
1 5 10 15

Arg Glu

<210> 34  
<211> 18  
<212> PRT  
<213> Triticum aestivum

<400> 34

Asp Lys Cys Arg Ile Lys Glu Ala Ile Ile Ser His Gly Cys Phe Leu  
1 5 10 15

Arg Glu

<210> 35  
<211> 18  
<212> PRT  
<213> Hordeum vulgare

<400> 35

Asp Lys Cys Arg Ile Lys Glu Ala Ile Ile Ser His Gly Cys Phe Leu  
1 5 10 15

Arg Glu

<210> 36  
<211> 20  
<212> PRT  
<213> Oryza sativa

<400> 36

Asp Lys Cys Lys Cys Lys Ile Lys Asp Ala Ile Ile Ser Asp Gly Cys  
1 5 10 15

Ser Phe Ser Glu  
20